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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/071,135	02/06/2002	Jose Merino-Lopez	A33384-A	2661

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EXAMINER	
MAKI, STEVEN D	
ART UNIT	**PAPER NUMBER**
1733	

DATE MAILED: 08/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/071,135	MERINO-LOPEZ ET AL.	
	Examiner	Art Unit	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21,30 and 31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21, 30 and 31* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1) A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5-27-05 has been entered.

2) The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3) Claims 1-21, 30 and 31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As to claims 1 and 31, the scope and meaning of "an estimate of a tangential force on the vehicle is obtainable based on the tangential force measured in the first tread element, without a measurement in the second tread element" for the claimed tire is unclear. One of ordinary skill n the art is not reasonably appraised of the scope of protection afforded by this language. For example, it is unclear if the above noted language excludes a sensor in the second tread element. The recitation of "without measurement in the second tread element" suggests that the second tread element cannot make a measurement (e.g. cannot make a measurement of tangential force) because it fails to have a sensor therein. However, it appears that claims 1 and 31 are intended to read on a tire having a sensor in the second element so that "an estimate of a tangential force on the vehicle is obtainable based on the tangential force measured in

the second tread element" since claim 6, which is dependent on claim 1, requires a sensor within the *second* tread element which is sensitive to least to a tangential force.

4) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Brazil

6) **Claims 7-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brazil (Brazil 200002924) in view of Japan 802 (JP 62-6802), Eudy (US 2152883), Japan 321 (JP 6-171321), Japan 807 (JP 61-263807) or Japan 918 (JP 8-118918).**

Although Brazil is not available as prior art against claims 1-6, 18-21 and 30-31 (these claims are entitled to the benefit of the parent application 09/636566 filing date (8-10-00) which is before the publication date (10-17-00) of Brazil), Brazil is available as prior art under 35 USC 102(b) against claims 7-17. With respect to Brazil being published 10-17-00, this application is a CIP of the parent application. Claims 7-17 are not entitled to the benefit of the filing date (8-10-00) of the parent application 09/636,566 since each of claims 7-17 are not directed solely to the subject matter disclosed in the parent application. The subject matter of claims 7-17 was first

introduced in this CIP application. Accordingly, the filing date of claims 7-17 is 2-6-02 (the filing date of this CIP application), which is more than one year after the publication date (10-17-00) of Brazil.

Brazil discloses a tire having a sacrificed rib / pad (first tread element) 1 and an ordinary rib / pad (second tread element) 2 wherein the sacrificed rib (first tread element) slides against the ground while the ordinary rib (second tread element) does not slide against the ground. As can be seen from figure 1, the upper surface of the first tread element is below the tread surface. The first tread element includes a sensor for measuring stresses in the longitudinal direction. See abstract of Brazil provided by examiner with the action dated 5-21-04 and the copy and English translation of Brazil provided by applicant with the response filed 10-19-04. Hence, Brazil teaches a first element which slides and a second tread element which does not slide as required by claim 1. Brazil does not recite providing the first tread element as a central zone surrounded by an encircling zone.

Japan 802, Eudy, Japan 321, Japan 807 and Japan 918 are applied in the alternative since (1) Japan 802, Eudy and Japan '321 differentiate the central and encircling zones using an annular cutout (similar to applicant's figure 6 embodiment), (2) Japan 807 differentiates the central and encircling zones using composition (similar to applicant's figure 5 embodiment) and (3) Japan 918 differentiates the central and encircling zones using wells (similar to applicant's figure 4 embodiment).

As to claims 7, 10 and 11, it would have been obvious to one of ordinary skill in the art to form an encircling zone and central zone as claimed wherein the central zone

has Brazil's sensor therein in view of (1) Brazil's teaching that the tire should grip the road, (2) Brazil's teaching to embed the sensor in a tread element and (3) Japan 802, Eudy, Japan '321, Japan 807 or Japan '918's teaching to form a tread element in a tread such that it has an encircling zone and central zone wherein

(A) Japan 802 teaches using low height small zones (central zones) partitioned by annular sipes to improve traction (grip),

(B) Eudy teaches using annular slits, which define a central zone, to improve traction (grip),

(C) Japan 321 teaches using sipes, which define central zones, to improve traction (grip),

(D) Japan 807 teaches to use different compositions, which define central zones for blocks of a tire, which has sufficient grip to be used on snow and ice,

(E) Japan 918 teaches using holes, which define central zones, to prevent uneven wear without worsening traction (grip).

With respect to Japan 802, it noted that one of ordinary skill in the art would have been particularly motivated to locate Brazil's' the sensor in small zone (central zone) suggested by Japan 802 since (1) Brazil suggests locating the sensor in a low height tread element and (2) Japan 802's small zone is a low height tread element.

As to claim 8, the claimed relative sizes of the zones would have been obvious in view of the relative sizes of the central and encircling zones suggested by Eudy or Japan 321; the zones having about the same area in the diamond shaped blocks in figure 8 of Eudy and Japan 321 teaching to provide the small zone with an area of

5-65% of the block areas.

As to claim 9, the claimed relative sizes of the zones would have been obvious in view of the relative sizes of the central and encircling zones suggested by Eudy, Japan 321 or Japan 918.

As to claims 12, 16 and 17 (thin recess strip / annular cutout), the claimed thin recess strip (annular cutout) would have been obvious in view of the annular cutout suggested by Japan 802, Eudy or Japan 321. With respect to claim 17, it would have been an obvious alternative to incline the annular cut since it is taken as well known / conventional per se to orient an annular slit such that the walls are inclined instead of perpendicular to the tread surface.

As to claims 13 and 14 (wells), note the wells suggested by Japan 918. With respect to claim 14, it would have been an obvious alternative to incline the wells since it is taken as well known / conventional per se to orient wells (holes) such that they are at 90 degrees or inclined with respect to the tread surface.

As to claim 15, Japan 807 suggests using different compositions wherein the central zone has a lower hardness.

Winner et al

7) **Claims 1, 18-20 and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Winner et al (DE 3939917).**

Winner et al discloses a vehicle tire 12 having a tread 11 and a multiplicity of measuring knobs 10, 101-105 (first tread elements) wherein a "sensor" 20 is embedded within the knob (tread element) 10 as shown in figure 2 so that (1) sensor unit 16 can

detect those measuring knobs (first tread elements) which slip (slide) during the rolling of the tire and (2) the momentary friction between the tire 12 and road surface (carriageway surface) 14 can be calculated so as to determine the instantaneous adhesion between the tire and road surface. Se abstract and machine translation.

As to claim 1, 18-20 and 30-31, the claimed tire is anticipated by Winner et al's tire. The claimed sensor reads on sensor 20. The claimed first tread element reads on a measuring knob having the sensor therein.

The claimed second tread element reads on another one of the measuring knobs. Claim 1 does not appear to exclude sensors in the second tread elements. See claim 6. Applicant states: "German '917 [Winner et al] discloses a tire having a plurality of measuring knobs to which a defined coefficient of friction is assigned by virtue of their geometric shape. The measuring knobs are capable of beginning to slide or slip at various different values of adherence on the road". (page 10 of response filed 10-19-04). With respect to claim 1, it is clear from applicant's description of Winner et al that Winner et al has "different" measuring knobs ("different" tread elements) wherein during rolling of the tire one measuring knob (a first tread element) can slide whereas another measuring knob (a second element) does not slide ("slides insufficiently"). With respect to claims 1 and 31, "at least within a range of rolling conditions [e.g. very low speed)", one of the measuring knobs (second tread elements) does not side / slides insufficiently as claimed. With respect to claims 6 and 30, Winner et al used plural measuring knobs. As to claims 18-20, see figures 1-2.

Alternatively, the claimed second tread element reads on the tread material 11 defined between the cutouts in which measuring knobs 101-105 are located therein. Claims 1 and 31 fail to exclude estimating tangential force on the vehicle based on the tangential force measured in more than one first tread element. As to claim 6, Winner et a uses plural measuring knobs. As to claims 18-20, see figures 1-2.

With respect to Winner et al's "measuring knobs" making a "measurement", the examiner makes the following comments: A "sensor capable of making a measurement of at least a tangential force [singular] in the contact surface of the first tread element during its passage through the contact surface" reads on Winner et al's sensor which "measures" a tangential force in the contact surface of the measuring knob (first tread element) - this tangential force being the force causing the measuring knob to slip. The claimed sensor fails to require for example the capability of generating signals representing measuring tangential forces in units of daN/cm^2.

Breuer et al

8) **Claims 1, 6, 18-21 and 30-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Breuer et al (DE 3937966).**

Breuer et al discloses a tire having a tread comprising **tread lugs (tread elements)** and **grooves**. See figure 1, figure 4 and first paragraph after the brief description of the figures on page 2 of the machine translation. Breuer et al provides at least one **sensor 4** in a tread lug (tread element) of the tread for detecting variation of local stresses in at least one horizontal direction and the normal direction. With respect to the sensor, a magnet 12 and Hall generators 14 may be used. See page 3 of

machine translation. The measured values are evaluated to determine the maximum coefficient of friction so as to enable determination of limits of stable vehicle operation before reaching them.

Claims 1, 6, 18-21 and 30-31 are anticipated by Breuer et al's tire. One of ordinary skill n the art would readily understand that Breuer et al's tread comprises at least one tread lug not having a sensor therein and at least one tread lug (tread element) having a sensor therein. The sensor causes the tread elements to e "different". The "first tread element" (the tread lug having the sensor) inherently slips "at least within a range of rolling conditions to be monitored" (emphasis added). The "second tread element" (the tread lug not having the sensor) inherently does not slip / slips insufficiently "at least within a range of rolling conditions to be monitored" (emphasis added). Claims 1 and 31 fail to require the slipping and not slipping to occur under the same range of rolling conditions.

9) **Claims 1-6, 18-21 and 30-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Breuer et al view of at least one of Knill (US 4319620) and Kukimoto et al (US 5445201).**

Breuer et al is considered to anticipate claim 1. In any event: it would have been obvious to one of ordinary skill in the art to embed Breuer et al's sensor in a first tread element which is "different" than a second tread element as claimed in view of (1) Breuer et al's suggestion to locate at least one sensor in a tread such that it is embedded in a tread element (e.g. tread lug) and (2) (a) Knill's suggestion to reduce rolling resistance while also providing adequate tread wear and traction (wet skid

resistance) by using different compositions for the tread elements of the central portion and outer portions of the tread and/or (b) Kukimoto et al's suggestion improve wear resistance by using different tread elements in a tread.

With respect to Knill and slipping / not slipping, Knill's tread has a "first tread element" which slips "at least within a range of rolling conditions" (emphasis added) and a "second tread element" which does not slip / slips insufficiently "at least within a range of rolling conditions" (emphasis added) since Knill's tread comprises tread elements having different compositions.

With respect to Kukimoto and slipping / not slipping, Kukimoto et al's tread has a "first tread element" which slips "at least within a range of rolling conditions" (emphasis added) and a "second tread element" which does not slip / slips insufficiently "at least within a range of rolling conditions" (emphasis added) sine Kukimoto et al's tread has different height tread elements; it being emphasized that Kukimoto teaches that the low height tread element "slides" in the ground contact area so that it function as a sacrificial portion and thereby improve wear resistance of he tread.

As to claims 2-4, Knill suggests the claimed different materials and Breuer et al suggests embedding a sensor in tread element of the central portion or the outer portion to determine frictional connection characteristics.

As to claim 5, Kukimoto et al teaches a low height tread element.

As to claims 6 and 30, it would have been obvious to provide sensors in first and second tread elements or sensors in first tread elements in view of (1) Knill / Kukimoto

et al's disclosure of a tread having "different" tread elements and (2) Breuer et al' suggestion to use plural sensors in a tread.

As to claims 18-21, Breuer et al teaches embedding a sensor 4 in a tread lug (tread element) of the tread for detecting variation of local stresses in at least one horizontal direction and the normal direction wherein with respect to the sensor, a magnet 12 and Hall generators 14 may be used.

Remarks

10) Applicant's arguments with respect to claims 1-21 and 30-31 have been considered but are moot in view of the new ground(s) of rejection.

Applicant's arguments filed 5-27-05 have been fully considered but they are not persuasive.

With respect to the 103 rejection using Brazil, applicant comments that Brazil is concerned with making measurements using a sacrificed rib. More properly, Brazil is concerned with grip of a vehicle on a road way. See first sentence of Brazil's disclosure.

Applicant argues that there is no reasonable expectation of success. This argument is not persuasive since (1) Brazil, concerned with grip, teaches that the sensor may be disposed in a rib or pad (block) of a tire tread, (2) Brazil, concerned with grip, teaches that the measurements can be made if for example the magnetic element can displace relative to the Hall effect sensor, and (3) Brazil, concerned with grip, fails to teach avoiding the use of the sensors in treads for improving grip such as that shown by Japan 802, Eudy, etc.

11) No claim is allowed.

12) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine Copenheaver can be reached on (571) 272-1156. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Steven D. Maki
August 18, 2005

STEVEN D. MAKI 8-18-05
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